

CLAIMS

What I claim is:

1. A selectable resolution image capture system comprising:
an imager having a plurality of photocells that produce an analog electrical response to light exposure;
a circuit that converts the electrical responses of the plurality of photocells into digital signals;
the circuit having a full-resolution mode and a low-resolution mode; and
an image processor that operates the circuit and selects between the full-resolution and low-resolution modes of the circuit to capture an image.

2. The selectable resolution image capture system of claim 1, where the circuit, in the full-resolution mode, converts the electrical response of each photocell into a corresponding digital signal to produce a full-resolution image.

3. The selectable resolution image capture system of claim 1, where the circuit, in the low-resolution mode, combines the electrical responses of groups of at least two photocells together and converts each group of combined electrical responses into a corresponding digital signal, to produce a low-resolution image.

4. The selectable resolution image capture system of claim 3, where each group comprises four contiguous photocells.

1 5. The selectable resolution image capture system of claim 1, where the image
2 processor detects whether there is a low light condition, and if so, captures the image using the
3 low-resolution mode of the circuit.

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5 6. The selectable resolution image capture system of claim 1, where the image
6 processor detects whether there is a low power condition, and if so, captures the image using the
7 low-resolution mode of the circuit.

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9 7. The selectable resolution image capture system of claim 1, further comprising a
10 user interface that permits a user to select from among a plurality of image resolutions.

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12 8. The selectable resolution image capture system of claim 1, where the imager is a
13 monochrome imager.

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15 9. The selectable resolution image capture system of claim 1, wherein the imager is
16 a color imager having a plurality of red, green, and blue photocells producing electrical
17 responses to red, green, and blue light, respectively.

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19 10. The selectable resolution image capture system of claim 9, where the circuit, in
20 the low-resolution mode, combines the electrical responses of groups of four same-colored
21 photocells together and converts the combined electrical response of each group into a
22 corresponding digital signal to produce a low-resolution image.

1 11. The selectable resolution image capture system of claim 1, where the circuit has
2 first and second read rates for the conversion of the electrical responses of the plurality of
3 photocells into digital signals, where the second read rate is faster than the first read rate, and
4 where the circuit operates at the first read rate in the full-resolution mode and at the second read
5 rate in the low-resolution mode.

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7 12. A method of capturing an image comprising:
8 selecting between a low-resolution mode and a high-resolution mode;
9 exposing an array of photocells that produce electrical charges in response to light
10 exposure to light; and
11 if the high-resolution mode is selected, then converting each electrical charge into a
12 digital signal to produce a high-resolution image;
13 else,
14 separating the array of photocells into discrete groups each having at least two photocells;
15 combining the electrical charges of each group's photocells together; and
16 converting each group's combined electrical charges into a digital signal.

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18 13. The method of claim 12, further comprising selecting between the low- and high-
19 resolution modes in accordance with an input from a person.

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21 14. The method of claim 12, further comprising detecting lighting conditions and
22 selecting the low-resolution mode if low-light levels are detected.

1 15. The method of claim 12, further comprising selecting between a fast- and slow-
2 exposure speed with which to expose the array of photocells to an image and selecting the low-
3 resolution mode if the fast exposure speed is selected.

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5 16. The method of claim 12, further comprising selecting between a fast- and slow-
6 exposure speed with which to expose the array of photocells to an image and selecting the fast-
7 exposure speed if the low-resolution mode is selected.

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9 17. The method of claim 12, further comprising detecting power conditions and
10 selecting the low-resolution mode if insufficient power is available to capture an image with the
11 high-resolution power.

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13 18. The method of claim 12, where each group comprises four adjoining photocells.

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15 19. The method of claim 12, where the array of photocells comprise red, green, and
16 blue photocells that produce electrical charges corresponding to red, green, and blue light,
17 respectively.

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19 20. The method of claim 19, where the array of photocells are arranged in rows and
20 columns with alternating patterns of red, green, red, green, and green, blue, green, blue.

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22 21. The method of claim 20, where each group comprises four photocells that are
23 responsive to the same color of light.

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2 22. A selectable resolution image capture system comprising:
3 an imager having a plurality of photocells producing electrical charges in response to
4 light exposure;
5 a high-resolution mode for converting each electrical charge produced by the plurality of
6 photocells into corresponding digital signals to produce a full-resolution image; and
7 a low-resolution mode for combining the electrical charges produced by groups of at least
8 two photocells and converting the combined electrical charges of each group into corresponding
9 digital signals to produce a low-resolution image.

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11 23. The selectable resolution image capture system of claim 22, further comprising a
12 read rate at which the electrical charges of the photocells are converted into digital signals, and
13 means for speeding up the read rate when the electrical charges of the at groups of photocells are
14 combined.

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16 24. The selectable resolution image capture system of claim 22, further comprising
17 means for detecting lighting conditions and selecting the low-resolution mode if the lighting
18 conditions disfavor the high-resolution mode.
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